Tech Center News

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SHOWSCAN PROCESS PUTS DEALERS IN DRIVER'S SEAT OF CHEVY'S NEW VEHICLES

by JILL LUCIUS

Chevrolet vehicles are moving foward, and so are its commercials. Just don't forget to hold on to your seats. . .

High tech vehicles require space age promotions — and that's exactly what Chevrolet has planned for its new Corsica, Beretta and full-size pickup.

What a better way to show off Chevrolet's all-new vehicles than with the use of the latest in film technology, a new process which creates a sense of movement and an amazing illusion of reality.

The process, known as Showscan, was put to use in two special films developed by Campbell-Ewald Company and directed by Douglas Trumbell of "2001: A Space Odyssey" and "Close Encounters of the Third Kind" fame.

Debuting at a special theatre in Orlando, Florida, during Chevrolet's 75th anniversary National Dealer Convention, the two films included a set of product presentations and "The Collector," a special made-for-theater commercial scheduled to appear in 4,500 movie theaters during the Christmas season.

"Chevrolet is introducing a trio of new products . . . in the coming months and wanted a presentation that would not only highlight their features for our dealers, but would also leave them excited," explained Thomas A. Staudt, Chevolet general marketing manager.

"The Showscan presentation they saw at our National Dealer Convention last month did just that," he said.

At the dealer convention's spectacular film presentation, Chevrolet dealers got a chance to see and feel the three new vehicles in action, a lot of action.

The antics of a magician and his robot companion are featured in the dealer presentation, and the two loveable characters introduce the dealer to the new products from every view as well as on the road.

Because Showscan creates such an amazing illusion of reality and movement, Chevrolet's dealer presentation put dealers in the driver's seat and took them for hair-raising rides down dangerous mountain roads and around frightening hair-pin turns at dizzying heights.

> ***"The Collector' is a unique celebration of Chevrolet's 75th anniversary and the introduction of one of our models."***

Let's just hope that dealers with queasy stomachs buckled their safety belts and took some Dramamine before they settled into the theater seats.

Although "The Collector" doesn't take the viewer on a high-speed joy-ride, it too has its own form of Showscan space age special effects.

"'The Collector' is a unique celebration of Chevrolet's 75th anniversary and the introduction of one of our models," Staudt said.

"The process in which it was filmed is another example of Chevrolet's commitment to utilize leading edge technology in every aspect of our business," he said.

"Technology will drive the system and we'd like to be very much in a leadership position in the sales and marketing area," he added.

In "The Collector," Chevrolet's new Corsica is literally "picked up" in an 'alien' environment for closer inspection.

Because the Corsica joins a number of desirable Chevrolet favorites in a alien's unique collection of the division's memorabilia, "The Collector" highlights Chevrolet's rich heritage as well as the impressive new carline.

Dinah Shore, who made the "See the U.S.A. In Your Chevrolet" commercials of the 50s famous, has a special appearance in "The Collector" as well.

"Dinah really loved working in this mini-feature," said Staudt. "In fact, she told us she would have been disappointed if we put together anything looking back at Chevrolet's history and didn't involve her."

Following the debut in Orlando, the massive "Showscan" theatre was set up at the Tech Center so that the media and Chevrolet and GM personnel could share in the unique new viewing experience.

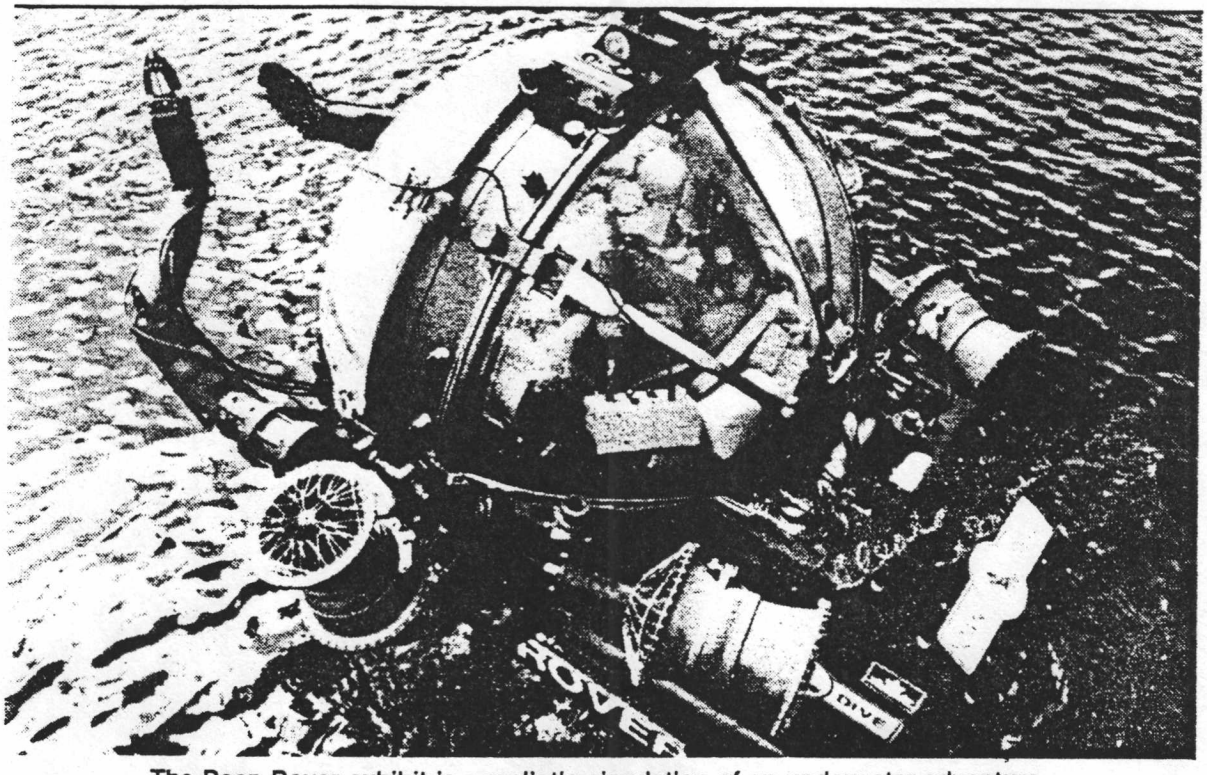
Although the public will get a glimpse of "The Collector" during the Christmas season, no movie theaters are yet set up to project the "Showscan images."

They will see "The Collector" in a more ordinary format, but the Showscan filming process will provide greater clarity than traditional films.

The high tech ideas, on film as well as in Chevrolet's new models, is all a part of 75 years in the divisions strides to provide the best, according to Staudt.

"One thing that hasn't changed and that's a continued quest for excellence," he said.

Chevrolet's finale for the two films says it all: "The end of old technology and just the beginning of the next 75 years."



The Deep Rover exhibit is a realistic simulation of an underwater adventure.

Photo Contributed

Underwater adventure in Deep Rover

B.C.'s world-class submarines and a new simulation technique are combined in a "total experience" exhibit at the Discovery B.C. building.

Located in the main hall, the Deep Rover exhibit is a realistic simulation of an underwater adventure aboard the Deep Rover II — one of B.C.'s renowned submersibles.

A replica of a real submarine bridge and the magic of Showscan film are used to create a dramatic undersea rescue of a stranded sub.

The adventure begins when up to 26 'passengers' enter the Deep Rover cab fitted with a large 'view port'. A convex Showscan screen is located behind its plexiglass 'bubble'.

Real underwater film images are projected onto the screen, giving viewers the impression of being at the bottom of the ocean. Video monitors and live commentary complete the illusion, making the simulator a total experience for fairgoers. The high-resolution, high speed film technique of Showscan film makes the simulation even more real

Underwater filming was carried out last fall near Port Hardy on Vancouver Island. Other submersibles that appear in the simulation include unmanned units such as the Wrangler, the Dolphin and the Hy-Sub. Praised for their design and endurance, these B.C. subs are used from the Arctic to the eastern U.S. for underwater rescue work.

The simulator is one of four major exhibit experiences in the main hall of Discovery B.C. Exhibit towers nearby—known as the "Trees of Discovery" — take fairgoers through fabulous audio visual exhibits featuring B.C. developed technology. The highest of these offers a 15-metre ride to the top of Discover B.C.

© The NEWS, April 27, 1986

Realistic Showscan boggles the movie-viewing senses

New process looks, sounds like a winner, and you can experience it at Fleet Theater

By David Elliott
Movie Critic

CinemaScope. Vista-Vision. Todd-AO. Cinerama. 3-D. Dolby. Sensurround. Remember when each was the future of movies?

There was even something called Smell-O-Vision, which lost its perfume when a film exhibitor rose after the inaugural feature, "Scent of Mystery," and proclaimed, "This stinks." And there is Showscan, which is prompting quite a few people to make the movie equivalent of critic Jon Landau's famous prediction, "I have seen the future of rock 'n' roll, and it is Bruce Springsteen."

Is Showscan the cinema's Springsteen or, better yet, its Beatles? The new technology may have a better chance than any previous wonder process to overthrow the rule of television (and its video cousin) and put theatrical movies once again at the edge of both excitement and profitability. The next two years should tell.

But you don't have to wait that long. The Reuben H. Fleet Space Theater in Balboa Park is showing "Discovery," the 17-minute film shot in Showscan and first seen by 2 million pairs of boggled eyes at Expo 86 in Vancouver. In the movie (tickets cost $3, or $2 for juniors and seniors) a Canadian girl is given a fast, fabulous tour of British Columbia by an outer-space visitor who whizzes around in a glowing red ball.

Due to Showscan, you can see every flicker of the girl's eye, watch a cowboy's lariat whipping with amazing realism around a horse's neck, almost feel the wet spray of an ocean dive, ski like a champion and swear that the Rockies are looming grandly overhead. The theater's domed screen, designed for Omnimax projection, is not ideal for the new process, which at its best requires a special screen that is less curved. But the distortion is marginal and hardly dampening.

A scene from 'Discovery,' a 17-minute film shot in Showscan.

Why is Showscan big news and possibly the big deal that will transform movies and movie theaters, perhaps even make current films seem almost as old hat as silent films? Because it delivers a new clarity and power of image, more convincing and far less gimmicky (and eye-straining) than 3-D.

Standard movies are shot on 35mm film and projected so that a new image passes before our eyes 24 times each second (in fact, to reduce the blur or "flicker" caused by black frame dividers, each image is shown twice, making 48 frames but still only 24 images bearing fresh information).

In Showscan, 70mm stock — four times larger than the 35mm cells — is filmed and projected at 60 frames per second. Far more detail floods the eyes. The picture has greater

See SHOWSCAN on Page E-8

Showscan—

Continued from Page E-1

depth and tremendous definition.

A customized Showscan screen becomes a theater's fourth wall, running wall-to-wall without drapes or masking. It bottoms at carpet level and rises nearly to the ceiling. Viewers don't look up at it but peer into it, as they would a natural head-on perspective. The screen becomes almost literally a window.

If Showscan can click as feature entertainment and not just as a World's Fair thrill, many theaters will quickly convert to the new screen, projection and modified Dolby Sound system it requires. The decisive fact is that, "We have practically no blur in our negative image." So says Peter Beale, the suave Englishman, once head of 20th Century Fox's European production and now executive vice president of Showscan Film Corp. in Culver City. His crusade for Showscan led him to San Diego this week.

Beale and his boss, Douglas Trumbull, the creator of the process, believe the time is now ripe. "The standard movie image hasn't really changed since 1929," says Beale. "And today CD players are making more money than movie tickets bring in. So are videocassettes. The number of screens has increased, but not the theatrical film audience, and the process of film projection we know will simply disappear unless it is improved to keep pace."

He is "cautiously optimistic that the first feature film in Showscan will begin production later this year, for release at Christmas 1988. A great many important directors would love to be the first to work in Showscan. Most exhibitors are now ready to make the investment in transforming their theaters, once the films are being made. When it happens, it should change the business in the way sound did in the '20s."

Beale estimates that conversion will run from $50,000 to $150,000 per screen. And Showscan should add around an extra $1 million per feature film, just for the cost of the film stock. Prints also will be more expensive. But the image sharpness is such a payoff "that most film directors and exhibitors are tremendously excited by it."

There's another, perhaps crucial advantage to the new format. Many people now take their movies through the video straw of home consumption, and the Japanese and Europeans are on the verge of marketing new high-resolution video screens and tapes. But, says Beale, "they won't be able to match the definition of Showscan. The Showscan films can be shown on tape and

> 'It's a challenge to filmmakers to now create films that make sense in a process so demonstrably real.'
> — Jeffrey Kirsch

35mm film, but without the Showscan effect, the extra dimension." He thinks that Showscan theaters will have about 20 years of clear technical advantage before home consumption might catch up — though "Showscan won't stand still during that time."

"This is what Cinerama wanted to be," says Beale, unboastfully adding a footnote to the recent news that San Diego's Cinerama Theater will be chopped into a multiplex operation. "And it took Douglas 10 years to move it from idea to reality. Well, it took 13 years to get zippers onto men's trousers!"

Trumbull, the Edison of Showscan, is best known as the special-effects designer for "2001: A Space Odyssey," "Silent Running" and "Close Encounters of the Third Kind." Working with standard film, he found that faster projection could lead to powerful emotional responses from viewers. Test subjects strapped to electrodes revealed that heightened response peaked at 60 frames per second, after which further increases in speed made no impact.

At first Trumbull, who only won a patent for Showscan three years ago, was rebuffed as a visionary by Hollywood. He was stymied by a vicious circle: Showscan films required special theaters, but such theaters were not economical until Showscan "product" was available. Not one to sulk, Trumbull next linked his dream to pizza.

Or rather, to the entrepreneurial drive of a pizza-franchise king, Robert Brock, whose chain offered entertainment along with pizza pies. Brock has now built four Showscan theaters adjoining pizza parlors in Alabama, Missouri, Texas and Virginia. Response has been good.

Even more promisingly, film exhibitors meeting in Las Vegas last year were dazzled by the $1.5 million Showscan short, "New Magic." They were also impressed when Henry Plitt, of the exhibition trade's overlords, sold his theater chain and became chairman of Showscan, reportedly bringing $20 million to help turn the experimental dream into a viable market network.

While many theater owners were financially stung when in the '70s Dolby Sound and 70mm failed to become the brave new world of showmanship and lure the big audience from TV, Showscan should combine those powerful processes with an extra dimension that has more than novelty appeal. The new image is extremely impressive without seeming gimmicky, and after some minutes the viewer simply accepts it as the new film reality — closer to optical truth than any he has previously seen on a screen, even the whopping Cinerama.

Critics and others who care about artistic matters have a question for which the answer remains fuzzy: Can Showscan create not just great images but great movies? Jeffrey Kirsch, director of the Fleet Theater, remarked this Tuesday that, "It's a challenge to filmmakers to now create films that make sense in a process so demonstrably real."

Realism has always been the main drive of American film, apart from animation and certain musicals, yet all our best films are not literalist works. And film processes that cramped imagination, like early, clumsy sound technology and the tiresome 3-D format, led to moribund movies.

Watching "Jaws" or "Predator" in Showscan could be too much of a vivid thing, while delicate dramas like "Round Midnight" could have their nuances bulldozed by the insistent strength of the new method. Superreal sex and violence could become hotter potatoes than ever before, bringing censorship to boil again. Like any process that transforms a medium, this one will require a lot of aesthetic tinkering and social tailoring before finding its poise and filling its promise.

Peter Beale, admittedly partial, believes that "directors will use their sensibilities to balance out the process, and they'll find no limitations imposed by it. The camera remains basically the same, after all. You can do everything done before, with an extra edge of reality. 'Out of Africa' would have been really wonderful in Showscan."

Possibly, like the "road show" studio films and Cinerama attractions of the '60s, Showscan may prove too special a breed, confined to showcase theaters in major cities and not quite economical for the shopping mall multiplexes that emphasize quantity over quality. As long as the popcorn keeps selling to the teen traffic, these outfits may not care to risk going out on the edge of a revolution.

One fact is already clear, as clear as Showscan: This is not the new Smell-O-Vision.

Chicago Sun Times
January 11, 1987

Hollywood has seen the future of television, and it is HDTV

LOS ANGELES- The television set of the future will have a picture of such high quality that it will be like going to movies. It will have a screen that can be almost as large as you like. It will transmit full wide-screen images without cropped off sides.

This set is not something out of the 21st century. It exists now. And you will be able to buy it within two years. It won't be cheap.

ROGER EBERT

That's the good news, as reported by Douglas Trumbull, the Hollywood prophet of the next generation of visual technology. The bad news is that this expensive new TV set will not be able to handle any existing television format—not cable, not over-the-air, not even the videocassettes in your collection. The TV of the future will only be able to play a new generation of high-resolution cassettes.

If you're good at making long-range stock-market investments, you can figure that this new generation of television will be good news for electronics manufacturers, good news for Hollywood studios, and bad news for TV networks, conventional TV stations and cable TV.

"It's going to be like having a movie theater in your living room, except that the picture quality will be higher than in any movie you've ever seen," Trumbull said after his latest trip to Japan—which is, of course, where these wondrous new television sets are being built.

Trumbull is the special-effects wizard best known for his work on Stanley Kubrick's "2001: A Space Odyssey," and most recently for his invention of Showscan, a revolutionary motion-picture projection system that creates images of such clarity that the screen looks like a 3-D window into reality.

Showscan, which projects 70-mm. film at 60 frames per second, 2½ times faster than the current standard, is a process that seems stuck in a Catch-22; exhibitors are waiting for a film to be made in Showscan before they convert their theaters to the process, and filmmakers won't use the process until they know theaters have been converted.

Trumbull believes, however, that high-definition TV, which also projects 60 images a second, may provide the bridge to make Showscan financially viable. Ordinary 24 f.p.s. movies don't look good enough on the new television system—and, at the same time, theatrical exhibitors will be looking for a spectacular new film process to compete with HDTV.

"When I was in Japan," Trumbull said, "I looked at a Sony high-definition prototype that has a 120-inch screen and an aspect ratio of 1.77-1. It uses 1,125 lines in its image, instead of 525 in existing television. It uses a computer to fill in the spaces between the lines. It has five times as much information as today's TV. And since today's average TV set only actually picks up less than half the information that is contained in the broadcast signal, when you see this new TV, you're not going to believe your eyes. For all intents and purposes, it's a home movie theater."

Trumbull was describing a wide-screen TV picture of great detail and brilliance. When he talks about the 1.77-1 aspect ratio, he means a picture about 1¾ inches wide for every inch of depth—a picture the same shape as the movie version of "Out of Africa," for example. Traditional television uses the 1.33-1 ratio of pre-1954 movies, before wide-screen formats came into use.

Trumbull claims that ordinary movies, shot at 24 f.p.s., will not be of high enough technical quality to play on these new televisions. Traditional movies look just fine on traditional television, and indeed many ambitious TV shows and most commercials are shot on film instead of videotape, because film provides better detail and more brilliant colors. But on the new generation of TV, Trumbull said, traditional movies will flicker—because the 1,125-line image will be capable of conveying more information than a 24 f.p.s. movie contains.

(The short-term answer for traditional television, he said, will be to use computers to enhance traditional movies. A computer, for example, could take each frame in a movie and repeat it; the resulting movie would play at 48 frames per second, which would look pretty good. But a movie actually shot at 60 f.p.s. would look much better.)

Trumbull emphasized that high-definition TV is not the same thing as digital TV, which is coming onto the marketplace right now. Digital TV is high-tech image processing that delivers to your screen more of what is actually being broadcast. "On the average," he said, "most home sets don't receive more than 200 of the 525 lines being broadcast."

Digital TV reconstructs the entire broadcast signal and provides the best possible picture for standard TV. Digital TV still will have a role after high-definition TV comes in, because HDTV will not replace traditional over-the-air or cable systems. The reason: HDTV signals contain so much information that one High Def signal would take up the space currently assigned to five ordinary TV channels.

In three or four years, the well-equipped home of a video fanatic may contain two entirely separate TV systems: a digital TV for broadcast and cable signals, and a big screen, 1.77-1 ratio HDTV system, capable of playing only HDTV tapes and discs. If that seems redundant, consider that most homes today receive music on over-the-air AM and FM radio bands, but may also contain phonograph turntables, cassette decks and Compact Disc systems.

What will all of this mean to the typical TV and movie fan? It may mean that existing network and independent TV stations will have to fight even harder for their share of the total TV audience, as they compete with alternative forms of home TV entertainment. Right now, 44 percent of American homes have videocassette recorders. The industry claims that by 1990, almost everyone with a TV also will own a VCR.

It may mean that viewers with big-screen high-def televisions will be able to see a picture in their living room as brilliant and detailed, and, in relationship to the room size, as large as in a multiplex movie theater. It may mean that theater chains will have to rethink the trend of converting to smaller auditoriums, and begin offering something spectacular, like Showscan, in big movie palaces. It is ironic but entirely possible, Trumbull said, that some of those older movie palaces that have been cut up into multiplexes will be converted to larger auditoriums again.

For Hollywood studios, HDTV is good news, a shot in the arm for the cassette revolution. Hollywood, which first thought of videocassettes as the enemy, now sees them as a friend responsible for up to 50 percent of the total revenue on many movies. When the number of VCR households doubles, theatrical exhibition of a film may represent only a third of its total income. And the big losers will not be the Hollywood studios—which have seen their box-office revenues stay steady while cassette income grows—but traditional TV and cable, which are losing audience share to cassettes.

For Trumbull, these developments may vindicate the war he has been waging for a decade on behalf of Showscan. Although he has a powerful ally in his business partner, the retired millionaire theater owner Henry Plitt, he has not yet been able to finance a movie in the Showscan process because of the Catch-22 situation: no movie without theaters, and no theaters without a movie.

"It took Hollywood 23 years from the invention of motion-picture sound to the release of the first talkie," Trumbull said. "When it comes to technological progress, the movie industry still drags its heels. When the studios owned their own theaters, there was motivation to introduce new technology: Fox came up with CinemaScope, and Paramount had VistaVision, for example. But the industry is now very mature, and stuck in a technological rut.

"High-Definition TV will make it economically feasible to shoot movies at 60 f.p.s.," Trumbull said. "Competition from such high quality in-home images will push Hollywood to offer even better quality images in its theaters. My process is the answer for both camps."

Trumbull may sound just a shade overconfident, but ever since he started demonstrating Showscan at industry trade shows, he has made large numbers of converts. Trumbull happily went through the numbers to explain why 70-mm. film at 60 f.p.s is so powerful: "One frame of 70-mm. film is three times as large as one frame of 35-mm., which they're using now. Sixty f.p.s. is 2½ times faster than 24 f.p.s., providing 2½ times as many images to the screen. The system uses lamps that throw three times as much light on the screen." He did some quick calculations in his head: "Three times 2½ times three equals an image that provides more than 20 times as much information to the eye."

The Japanese have had the technology for high-definition television for a few years, Trumbull said, but have been delaying its introduction until manufacturers could agree on a standard; they didn't want another debacle like the videocassette Beta/VHS controversy.

Now that they have a standard, they'll unveil HDTV at the October, 1987, convention of the Society of Motion Picture and Television Engineers, and begin to show commercial prototypes at the Consumer Electronics Show in Chicago in June, 1988. Trumbull guessed that the first sets would cost several thousand dollars, but that the price would gradually come down.

There is an irony in all of this. Because HDTV cannot be broadcast over the air like conventional TV signals, the production of HDTV software will be dominated by Hollywood studios—which also can use the same technology to create spectacular theatrical films. The irony: Hollywood, which once feared it would be destroyed by television, may find that HDTV is the most potent weapon it has ever had against the networks.

EXPO 86 THE PACIFIC RIM EXPO 86 EXPO 86

A feast for the eyes

By NEAL HALL

THE element that ties the Pacific Rim nations together — the Pacific Ocean — is traversed by every form of water transporation imaginable in the wide array of audio-visual presentations in Pacific Rim pavilions, from the "long tail" boats of Thailand to the mini-submersibles of B.C.

Some of the audio-visual shows are dazzling examples of high-tech film technology, others offer simple slide shows.

All, however, are out to dazzle Expo visitors with the fast-paced color and excitement that can't be duplicated by static displays of immobile objects.

Among the most dramatic of the high-tech shows is B.C.'s Discovery, a 16-minute film that uses American technology, the Showscan film process, to showcase the province's scenery and technological achievements.

Showscan was invented in 1978 by Douglas Trumbull, who directed the special effects for such movies as Star Trek, 2001, and Close Encounters of the Third Kind.

Showscan's highly realistic 70-mm image is projected horizontally at 60 frames a second — 2½ times faster, four times larger and four times brighter than conventional film — on a concave floor-to-ceiling screen that measures 50 feet high by 70 feet wide. Seats are sloped on about a 30-degree angle.

Trumbull says he developed Showscan to draw people away from their VCRs and put excitement back into the movie-theatre experience.

The result: visitors are whooshed across B.C. aboard Zargon, an interplanetary spaceship that speaks to its travelling companion, Vancouver actress Fairuza Balk.

Another smaller Showscan theatre (24 seats) in the B.C. pavilion recreates an underwater rescue in a Deep Rover submersible. The film is shown in one of four "discovery trees" in the B.C. pavilion. Three of the sculpture-like exhibits transport visitors in audio-visual elevators, which also have rotating floors and hydraulic windows, which open to reveal mini slide shows.

MOLLY A STAR IN SPACE FILM

The star turn in the B.C. pavilion is the 16-minute Showscan film in the Discovery building in which a little girl called Molly (Vancouver's Fairuza Balk, star of the recent film remake of The Wizard of Oz) goes for an aerial tour of the province with a spacecraft character called Zargon. Watching the skiing sequence in this film on the huge concave screen is an almost participatory experience.

In the Challenge building there's another film, a 19-minute production on a 29-metre wide screen which shows a day in the life of British Columbians: fishermen, office workers and cowboys.

THE HOLLYWOOD REPORTER
MARCH 3, 1987

Major expansion planned for Showscan Film circuit

Buoyed by overwhelming public response received at Expo '86 in Vancouver, B.C., Showscan Film Corp. is poised to expand its speciality theatres into a permanent film circuit, according to co-chairmen Douglas Trumbull and Henry Plitt.

Already planned or under way are new Showscan locations in Las Vegas, New York, Chicago, San Francisco and San Diego, as well as Japan and Belgium.

While the new circuit will initially concentrate on films geared toward tourism, education, fantasy, documentaries and other short-form entertainments, Plitt indicated that the company expects to make an announcement regarding feature-length motion pictures to be made in the patented Showscan process.

"With eight to 12 theaters going into operation within the next year, we will have a solid base to support the production of additional speciality films," he said.

Formation of the International Speciality Circuit was heralded by the 17-minute film "Discovery," which attracted more than two million visitors to the British Columbia Pavillion throughout Expo '86. The 500-seat theater in which "Discovery" will continue to run indefinitely holds the distinction of being the first permanent North American installation to host a Showscan film, Plitt added.

Noting that the "speciality venue theater is one in which the process has already proven itself," Plitt outlined Showscan's upcoming slate, which includes the May 30 premiere of "Niagara Magic," at the newly constructed 300-seat Centennial Theatre in Niagara Reservation State Park, and the late summer opening of "Kiwi Experience" in the 100-seat Rotura Theatre in New Zealand.

A January 1988 opening is planned for two additional 500-seat theaters Down Under, which will premiere a 15-minute documentary celebrating the Australian bicentennial. Following the initial exhibition of the film, equipment from both the theaters is expected to be transferred to other permanent sites in Australia augmenting the international library, Plitt said.

These films will be distributed to various theaters in the International Showscan Circuit and are expected to make a substantial contribution to the Showscan library.

IL-D22 CHICAGO SUN TIMES
(M)639,100 (S)669,400

New format puts you in the picture

Revolutionary filmmaking process paints reality on—and in—screen

LAS VEGAS—I want to describe this just the way it happened to me. I walked into a movie theater in the MGM Grand Hotel, and sat down, and the lights went out, and a movie started. Then the film broke. The lights went on behind the screen and there was a guy back there who walked up to the screen and pressed his hands and face against it, trying to see us in the audience, and he apologized for the film breaking. Then he went to look for his boss, and I could still see how the screen was stretched where he had pushed it with his hands.

ROGER EBERT

The movie didn't really break. The guy wasn't really behind the screen. He was in the movie. But I am crossing my heart when I tell you that the illusion was so real that it actually looked like a guy was back there behind the screen, and you could really see where the screen was bulging out. I had just witnessed the most realistic motion picture I had ever seen in my life—incomparably more realistic than anything I had ever seen before on a movie screen, even in George Lucas' private screening facility outside San Francisco, even at the Cannes Film Festival, even on the giant IMAC screens they use for the space-shuttle films in Toronto and Washington.

The name of the process is Showscan. It is the future of the cinema. It is not some kind of gimmick, like 3-D or Cinerama. It is a projection process and a sound system so breathtakingly distinct and clear that if they ever made a movie like "Raiders of the Lost Ark" in this process; it would simply be too intense for a lot of people, and they would have to leave the theater.

Showscan is the invention of Douglas Trumbull, the Hollywood special-effects genius who did the visuals for "2001: A Space Odyssey" and "Close Encounters of the Third Kind."

He has been trying to interest the movie industry in his process for eight years, but now, at last, he has some clout. He has formed a corporation with Henry G. Plitt, the millionaire exhibitor who recently sold his theaters in Chicago and Los Angeles. Plitt is now semi-retired and sees Showscan as a way to pay back the movie business by giving it something as revolutionary, in its way, as the first talking movie. Trumbull and Plitt brought Showscan here to Las Vegas for ShoWest 86, an annual convention of movie exhibitors, distributors, concessionaires and filmmakers.

Special-effects genius Douglas Trumbull (left) has teamed up with Henry Plitt (above) to market his film process, Showscan.

The way Showscan works is so simple that anyone can understand it. You have to start with a few basic facts: Almost all of the movies you see in theaters are projected through 35mm film that travels through the projector at 24 frames a second.

A few big-budget epics are filmed in 70mm, but they also move at 24 frames a second. If you have seen 70mm in a good theater, you know it delivers a better picture with more clarity and visual depth than 35mm. No wonder: It gives the projector a larger film image to shine through, with more detail.

Here is what Showscan does. It uses 70mm film that moves through the projector at 60 frames per second—2½ times faster than ordinary movies. That creates an image that is based on five times as much information as today's movies. The image is so sharp, so clear, so vivid and so real that it is like 3-D in reverse: Instead of popping out of the screen at you, Showscan gives you a picture with such amazing depth that you can look into it.

To go along with its high-speed projector, Showscan also uses a high-resolution screen and a state-of-the-art sound system. In the 30-minute demonstration reel that Trumbull and Plitt brought to Las Vegas, there was footage taken from an airplane swooping low over a mountain range, and from a camera mounted close to the road on a speeding motorcycle.

Various special effects and dramatic scenes also were shown. In every case, I was acutely aware that I was not watching a gimmick, but a system that takes existing film technology (i.e., light projected through moving celluloid) and simply uses larger film and a faster speed to enhance the illusion of reality.

The speed of 60 frames a second was not an arbitrary choice, Trumbull told me after the demonstration was over. "We placed subjects in a room and wired them for electrocardiograms and showed them films at various frame speeds.

"Their responses went up in a steady curve until about 60 frames per second, and then leveled off. Apparently 60 frames approximates the amount of information the eye is capable of taking in."

Trumbull and Plitt both admitted that Showscan is in a "Catch-22" situation: Studios are reluctant to make a movie in the process until enough theaters are equipped to show it, and exhibitors are reluctant to equip their theaters until they know a movie is ready.

"We're making progress on both fronts," Plitt said. "By the end of ShoWest, we will have about 200 theaters committed to convert to Showscan if we have the movie. And we are talking to a couple of major filmmakers

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New process an eye-popper

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about working in the process." Among the names bandied about at ShowWest: Steven Spielberg, who might make his next Indiana Jones film in the process, and Albert R. Broccoli, whose James Bond series is shopping for a new Bond, and might introduce him in Showscan. Such new movies would not be limited to Showscan theaters, since they could easily be reduced to 35mm and 24 frames per second for ordinary theaters, Trumbull said.

"This is like the year before the first talkie came out," Plitt said. "The technology to make talking pictures was in existence for about six years before Warners finally made 'The Jazz Singer.' But the studios delayed making a sound movie because they said the theater owners would never invest in the new equipment. Well, once folks heard Jolson, it didn't take the industry long to buy those speakers."

Showscan is a bit more expensive than a sound system, however. One major cost is the print itself; in 70mm and with 2½ times more frames than an ordinary movie, a single print might cost $10,000. But Trumbull figures people who pay $6 to see Indiana Jones in 35mm will spend $10 to see it in Showscan. I believe him. I even believe that after the movie is over, some people will peek behind the screen to be sure Harrison Ford isn't back there somewhere.

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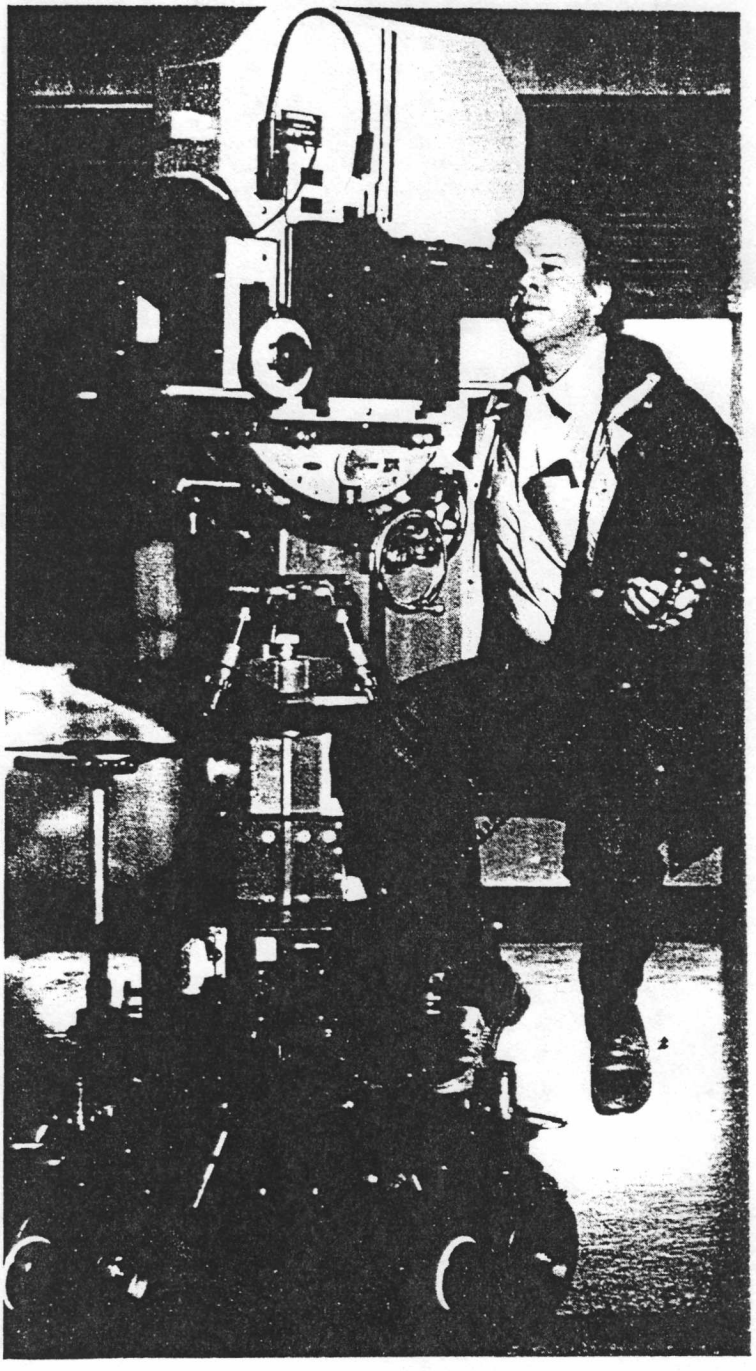
Videography

CONVERSATION WITH SHOWSCAN'S DOUGLAS TRUMBULL

A close encounter with the special effects wizard who's projecting big results for Showscan



Conversation with Douglas Trumbull

One of the biggest hits of the recent Tsukuba Expo '85 in Japan was the Showscan presentation at the Toshiba Pavilion. After a wait of up to four or five hours, visitors were treated to the largest public showing of this super-real, giant-screen film process. Despite its incredibly high-resolution pictures and amazing ability to involve the audience, Showscan works its magic by a few simple alternations in the traditional motion-picture shooting and projection process. Rather than shooting and projecting at 24 frames per second, Showscan photographs and shows its 70mm film at 60 frames per second. To Douglas Trumbull, creator of Showscan, the presentation at Tsukuba was an important benchmark in the attainment of a dream: to revolutionize the way in which motion pictures are photographed, distributed and shown.

The Tsukuba Expo was not the first or last world's fair to play an important role in Trumbull's life. Back in 1964, this architecture-student-turned-technical-illustrator was discovered by Stanley Kubrick. At the time, Kubrick was starting work on *2001: A Space Odyssey*, and Trumbull was working at a small animation company in Hollywood. The company, Graphic Films, specialized in making space films for NASA and the Air Force, and had produced a film for the 1964 New York World's Fair. Kubrick was so impressed by the painted animation effects in the film that he hired the 23-year-old responsible for it, Douglas Trumbull, and brought him to England to work on *2001*.

Trumbull became a member of a new and increasingly in-demand group of production specialists: the special effects experts. Since *2001*, he has supervised the special effects for *The Andromeda Strain, Close Encounters of the Third Kind, Star Trek: The Motion Picture* and *Blade Runner*. In addition, he has directed several features, including *Brainstorm*, for which he also created special effects.

While working on special effects, it became increasingly clear to Trumbull that the tremendous amounts of effort and money spent on his specialty was not, in most cases, showing up on the screen. He knew that there must be ways to improve the quality of the picture that the audience was seeing. In 1975, he was given the opportunity to head an R&D group financed by Paramount. Called Future General, the group, Trumbull says, investigated ways to make movies "bigger, better, brighter—in some way improved."

What Trumbull found, first by viewing test films and later in lab situations with viewer subjects, was that by increasing the frame rate, "You could create tremendously increased siological stimulation of human beings."

Just what happened to Showscan in the 10 years since Trumbull's discovery has all the drama and plot twists of a typical Hollywood potboiler. Interestingly enough, one of the important supporting "characters" in the story is video itself, because as Trumbull sees it, Showscan and high-definition video are closely linked in the future of visual entertainment.

The project was mostly developed while Trumbull was working for Paramount, but Trumbull took Showscan with him when he left the studio. He teamed up with Bob Brock, owner of ShowBiz Pizza Place, a family-oriented restaurant featuring video games. Brock and Trumbull were moving ahead on plans for a chain of Showscan theater/restaurants when the decline of the video game market made investors wary.

Nineteen eighty-six promises to be an exciting year for the Marina del Rey, California-based Showscan Film Corporation. Starting in May, several Showscan projects will be presented at Expo '86 in Vancouver. Plans are also in the works to open the first Showscan theater, probably in Los Angeles, early in the year. The move to theatrical distribution is the result of a recently concluded deal between Trumbull and Henry Plitt, the theater chain developer, who became the majority stockholder in Showscan in late May. While the first Showscan theater in L.A. will be showing already produced Showscan shorts in addition to traditional motion pictures in exhibition, it may not be too long before there's a full-length Showscan feature in a Showscan-equipped theater in your area.

Consulting editor Marjorie Costello, who first saw Showscan at Tsukuba Expo '85 in March and reported on the system in **Videography** this past June *(The Big Video Picture from Japan)*, spent some time at Showscan's headquarters. There she screened the Showscan short, *New Magic*, and *Tour of the Universe*, a Showscan segment that will be presented this fall as part of a simulated trip into outer space at the CN Tower, in Toronto. She also had the opportunity to speak with Douglas Trumbull about a range of topics, including Showscan, the motion picture industry and the future of video and film.

Videography: Could you take us back to how the idea for Showscan came about? Was it developed to improve the definition and resolution of motion pictures? Was it a desire to improve the way in which the 70mm format could be used to enhance the motion picture experience?

Trumbull: It was much more general than that. I started a company called Future General Corporation, which was a subsidiary of Paramount Pictures. At that time [1975], Frank Yablans was the head of Paramount Pictures and I talked him into setting up this company to do pure research into the basic question as to whether there was any way to make movies bigger, better, brighter—in some way improved. Frank Yablans had a lot of confidence that this was worth looking into.

I did tests with just about every film format known to man with my friend Richard Yuricich, who is a cinematographer and special effects man.

We photographed tests in VistaVision, Super Panavision, Ultra Panavision, Techniscope, D-150 and Todd-AO.

Videography: What was D-150?

Trumbull: D-150 was a wide-screen, 70mm photography and projection process that came on right after Todd-AO. I believe it was used in *Patton* and maybe one or two other pictures.

We tried Imax, Omnimax. We tried all the film formats we could get our hands on. We tried different kinds of screens, surfaces, brightnesses, reflectances. We were very disappointed with all the results. We felt that the habit that the motion picture industry had been in, achieving improvement by enlarging or changing the film frame, seemed to be inaccurate. That was not a solution. We felt there was something missing that we couldn't put our fingers on.

We finally resorted to a test that was based upon a hunch I had: We tried different frame rates. To make a long story a little bit shorter, it resulted in a test in which we photographed scenes at 24, 36, 48, 60, 66, and 72 frames per second (fps). Then we projected these tests at the same frame rates in which they were shot. This was in a laboratory situation where the order of events was completely scrambled, but essentially you subjected one person at a time to the same film over and over with the only variable being frame rates. The subjects watching had no idea why they were there or what they were supposed to look at.

We were at a university near here with PhDs in physiology supervising the tests. We hooked up each person to an electrocardiograph, galvanic skin response, electromyograph. We also asked them a lot of detailed subjective questions. The result of the test was that we demonstrated to ourselves that by substantially increasing the frame rate up to a zone of about 60 fps, you can create tremendously increased physiological stimulation of human beings. It is absolutely graphable. Above 60 fps, it doesn't seem to improve, but below 60 fps you can see a definite descending curve of physiological involvement.

Videography: What you seem to be saying is that the Showscan system came about more from trying to heighten the audience's emotional and psychological response to a film rather than as an attempt to improve the definition of the picture on the screen.

Trumbull: Yes, but definition was certainly of interest to us. I just felt very frustrated on a number of levels with the movie industry. Because I was in the special effects end of the movie industry, we were always pushing the frontiers of what kind of bizarre imagery you could put on a piece of film. I started realizing that we were spending upwards of $200,000 a minute on special effects production costs and what we were producing was not getting to the public.

Videography: It was not making it to the screen.

Trumbull: It wasn't getting to the screen because of a lot of bad practices in the movie business of multiplex cinemas and small screens and monophonic sound. There was an inability of the industry to implement any newly improved sound systems. There were habits of projecting with much less brightness than they should be projecting with, of using lenses that were not very sharp. There were eightplex theaters running movies simultaneously with only one projectionist, so no one was watching focus and prints were being scratched from one end to another. There were just generally low-quality exhibition standards as well cost cutting in the laboratory practices on the production end of the business.

Videography: There's a certain parallel to that in the TV business. There's no point, in many cases, of adding production values because by the time the picture gets to the home screen, it has been degraded quite a bit.

Trumbull: That's right. I think that's true.

Videography: What kind of technical developments were going on in the film industry when you were working on Showscan?

Trumbull: None. The only significant energy being invested in motion picture exhibition quality was in the area of sound. There were a number of people actively pursuing improvements in stereo sound systems for theaters.

Videography: One of the reasons given as to why the motion picture industry doesn't invest in new technology dates back to the court ruling in the early 1950s barring the studios from owning theaters. The studios don't have as strong an interest in upgrading exhibition as they did before the consent decree. Do you think that a system like Showscan could open the doors for the studios to get back into theater ownership if they could show it would advance technology? How does the decree affect Showscan?

Trumbull: There are several aspects to that. We have been advised by our attorneys that the fact that we are creating a vertically integrated company which will produce, distribute and exhibit films under one roof is not antagonistic to the consent decree. We simply don't fall under the consent decree.

Videography: Why is that?

Trumbull: The only companies bound by the consent decree were the companies active at the time it was implemented. That was Warner Brothers, Paramount, MGM, United Artists, etc.

Given all the time that has passed between the consent decree and now, even if we are enormously successful with what we are going to do, we would still only have a relatively small percentage of the total dollars spent on entertainment. Therefore, we are not in an antitrust or monopoly situation of any kind.

Secondly, our business plan includes "mainstreaming" the Showscan process and making it open to all producers, all studios, all directors and all exhibitors. We'll license it to anybody.

Videography: Going back to the tests you were doing in the lab—how did you arrive at the 60 fps rate?

Trumbull: I knew that video plays a very big role in the world of entertainment. And one of the most important things for us to achieve would be a very important and continuing compatibility between film and video.

Under the present standards, where film is shot at 24 frames and transferred to 60-fields-per-second video—or in Europe where it is 24 or 25 frames transferred to 50-field video—there are a lot of compatibility problems. There are a lot of standards conversions that tend to degrade the product in the process of transferring from one format to another.

I felt that our discovery of 60-frame or 60-field information was very fundamental and important. It would tend to interlock perfectly with video.

Videography: So you would be going with video field-to-field, since video is 30 frames per second with two fields in a frame?

Trumbull: Video is 30 fps, but what most people have not grasped is that one of the reasons why video is so stimulating as a medium is that it is at 60 fields per second. Because of the way the image is captured by the tube at the television camera end of the medium and transferred sequentially field by field and then transmitted and received and put on a picture tube field by field, any object that is moving in front of the camera is actually in a new, distinct position on each field.

So even though you would say that there were 30 frames of two interlaced fields, motion has occurred between the two fields. We wanted Showscan not only to be compatible with video but to do what video was doing.

Videography: To tap into some of video's characteristics.

Trumbull: Yes. Video inadvertently stumbled on a sixty-field rate because of the human eye's persistence of vision and brightness levels. Sixty-field video is definitely superior to fifty-field video because sixty-field doesn't flicker.

Videography: Maybe that explains my reaction when I first saw Showscan at Tsukuba. To me, it looked like video. It looked like live TV on some sort of gigantic video screen. Is that a typical response?

Trumbull: Yes, quite often. In an early film we shot, we specifically created a scene to look like video. We lit the scene like a television production set for a soap opera to give you that live feeling. People who have watched that scene report a very intense feeling of voyeurism, of actually being there and being with people in an emotionally charged personal situation. So Showscan tends to draw the audience more intimately into the action than the distance that is presented in a normal film.

But I also anticipated—when we settled on 60 frames—that high-definition video was definitely going to be the coming thing. I was almost certain at that time that high definition video would also standardize at a 60-field [30-frame] rate. I think that is going to happen. I have spoken with a lot of people about high definition video and I have seen high definition. In Japan and America the 1,125-line, 60-field rate is being adopted. They are trying to talk the European community into adopting a similar rate, so we could have a worldwide direct-broadcast standard.

There was a big meeting in Paris on that subject. I sent a paper encouraging them to go for the 60-field rate and explained a lot about Showscan and how it relates to that. I know that Coppola and Lucas also sent papers. We are all supporting the 60-field rate. Even the Soviets are supporting it.

There are a lot of aspects to this that will be important to worldwide entertainment and communications. The standard that will be adopted, at least in the U.S., Japan, and the Soviet Union if not Europe, is not only going to be an 1,125-line, 60-fields-per-second system. It's also a five-by-three [5:3] wide-screen aspect ratio. That is essentially the same as 1.66:1 motion pictures. That is more conducive to the use of wide-screen information.

Videography: You mentioned a direct-broadcast standard for HDTV. Have you experimented with or considered the feasibility of converting Showscan into an electronic signal and transmitting it? Have you transferred Showscan to tape?

Trumbull: Here's the problem with that. Presently, with the anticipated implementation of high definition TV, they are talking about a 20-to-22-megahertz bandwidth to transmit 1,125 lines. To transmit an image electronically that has the same amount of information as Showscan would take 10 times that bandwidth. It would be over 200-megahertz bandwidth. It's a bandwidth that's not available and not in the cards. It would take half a communications satellite.

The only way you could seriously anticipate that kind of bandwidth would be through a fiber optics cable system direct-wired to your home. And that is way out in the future.

One of the tests we are going to be doing in the next two or three months, which I hope to be doing in Japan in conjunction with Sony, NHK and CBS, is to take Showscan film and transfer it, one field to one frame, to high definition video. We are all interested in this 60-field issue. We'll probably use the film we made for the Tsukuba world's fair.

Videography: Have you done any transfers of Showscan to tape?

Trumbull: Yes, but they have been very crude because we have been taping it live off the [Showscan] screen. But the resolution looks fantastic.

The interesting thing is that if you have a video medium that has several properties—the number of lines it can convey, the brightness and contrast ratios and color saturation it can convey and the amount of motion information it can convey—and if you do anything to that medium in the process that destroys or disrupts any of those qualities, you are going to degrade the medium. So if you take a 24 fps motion picture and put it on video, you are simply not utilizing the potential of the [video] medium. If you put a 24 fps, 70mm movie on HDTV, you are are still not fully utilizing the capacity of the medium.

Videography: What you seem to be hinting at is the best thing that could happen for Showscan is to have a HDTV system in operation because that would demand that the resolution of any films distributed with HDTV be of much better quality. And Showscan, because it's produced and shown at 60 fps, best utilizes the HDTV system.

Trumbull: That's right. It would optimize the system to make it totally compatible. I think that may be what will happen in the future.

Videography: How do the HDTV powers regard what you are doing? Do they see Showscan as a threat to HDTV?

Trumbull: Not at all. There are some interesting things happening in terms of the industry's understanding of how all this works relative to entertainment and technology. The world of hardware and technology can't exist separately from the world of software and production.

Some of the truths they are realizing now are the result of the Expo in Tsukuba. It was the first time all of the world's media could be found in one place. You had all the 3D processes, all the wide-screen processes, all the high definition TV, all the slide projectors back to back.

I think the Japanese were naive to a certain extent, and up until this moment were convinced that the implementation of HDTV would make 35mm films obsolete. They thought they would be able to completely displace 35mm production, distribution and exhibition through the implementation of HDTV and electronic photography, postproduction and home distribution via TV sets, or theaters via video projection.

What they realized by going to the Expo and seeing things like Showscan is that there is no way in hell they are going to be able to provide the bandwidth of information that we can convey. And, that we have a very good shot at substantially revitalizing the theatrical motion picture industry once it becomes affected by HDTV. And HDTV will affect it significantly.

Some of the factors which they [the Japanese] had ignored are becoming a little clearer. One of the big factors is that the value of software on HDTV—this big glut of movies, that's what the video industry is about now, renting cassettes of movies—is established entirely by its success theatrically in theaters. Nobody is going to pay a penny to rent a movie-of-the-week that was shown first on television.

What they are realizing now is that theaters will continue to succeed but they will be event palaces. They'll have large screens, multi-channel stereo sound, huge pictures like Showscan with multi-million-dollar software. These will be $20 million-scale features with a lot of special effects, with big-name stars, and with huge sets and production costs. That will create the value of the software. And that software becomes the software for HDTV medium.

Videography: So what will happen to those nice little movies such as *Ordinary People*?

Trumbull: I think those will be direct broadcast, [pay-per-view], day-and-date opening. If you make an *Ordinary People*, it will go worldwide or nationwide by direct broadcast satellite. And the studios are very eager to do that because they would like to get rid of their distribution departments and the need to order 2,000 prints of a movie and to keep offices open all over the country.

With direct-broadcast satellite release or even pay-cable network, they can get a huge return on their investment without having to strike a print or having to operate those distribution companies. They can simply scan the cut negative. They can reduce their postproduction lab costs by doing all their timing electronically.

Videography: Speaking of event palaces, you designed the Showscan theater at Toshiba's Tsukuba pavilion that included the Showscan presentation. The theme of the pavilion was "Human Electronics." They are an electronics company, but they chose a film system for their theater. I found that a bit ironic. How did they choose Showscan?

Trumbull: Nobody has a large-screen video system that can hold a candle to Imax, Omnimax, Showsan or 3D. Large-screen electronic display systems are really in their infancy relative to film. So I don't think that they [Toshiba] think of film as being antagonistic to their products. They simply wanted to tell their story about their concept of the future and electronics and the interrelationship between man and the machine.

photo by Marjorie Costello

Videography: With all those long lines, it might have been fun to have some Showscan presentations in smaller situations to keep people entertained while they waited.

Trumbull: We've had a lot of thoughts about that. But it was too early in our history to be able to get anybody convinced of that. Now that we have demonstrated the system at Expo '85 in Tsukuba, we are going to do that kind of thing at Expo '86 in Vancouver.

We are going to have a lot of other multiple uses of Showscan at Vancouver. The *Tour of the Universe* film, which you just saw, that opens in September in Toronto, is a use of a small-screen automated projection version of Showscan interlocked with video and digital sound and physical motion.

Videography: I'd like to go back to the development of the business of Showscan. Could you fill us in about what happened with Future General?

Trumbull: The management at Paramount changed. Frank Yablans left and I was under the management of Michael Eisner and Barry Diller, who had emerged primarily from the network television business. I did everything I could to interest Paramount, but I felt that on one hand, they really didn't understand what I was trying to achieve. On the other hand, they had no interest in changing the nature of motion picture exhibition practices. And they also suffered from the same problem that really all the management of all the studios have: a) the consent decree affects them; b) they have no connection to the exhibition end of the business.

There is this catch-22. I was dealing with Paramount, which was saying, "We just can't find a place to show it," and the exhibitors, who were saying, "Hollywood is just not producing the material." I just went around and around, and finally, I gave up and decided that the only way I could do what I wanted to do was an end run and bypass that problem and create a new, vertically integrated company. And I hunted around for a partner to do that.

I did negotiate an amenable exit from Paramount to acquire the patent rights to the process.

Videography: I heard that you did the special effects for *Star Trek*, in exchange for the rights to Showscan.

Trumbull: That's right. Paramount was in a pretty substantial bind at the time. They had taken some of the largest advance guarantees on a feature film ever with *Star Trek*. It probably was around $25 or $30 million in advances to deliver *Star Trek, The Motion Picture*, on December 7, 1979.

The film was troubled by a really slow special-effects program, and it was way behind schedule. The threat was that if Paramount was unable to deliver the picture, the exhibitors would close those 750 theaters and leave them empty for the Christmas holidays. Then, they would file a $200 million class action lawsuit against Paramount to break the back of blind bidding. Blind bidding was killing the exhibitors. It still is. They are tired of paying money in advance for a pig-in-the-poke movie.

Paramount decided they had to get this movie on the screen no matter what. They thought I was the only guy who could get them out of that jam. It meant doing as many special effects as *Close Encounters* and *Star Wars* combined in one-quarter of the time at enormous expense. It was a 24-hour-a-day operation for seven months to get the picture completed.

I said that I would do this for them, but that we should all recognize that Showscan was not going anywhere at Paramount. I told them that when I got done, I wanted to take Showscan with me and go. They said that was a good deal. We settled and it was very amicable.

Then I started shopping around town and I realized that all the major studios had the same problem as Paramount in terms of lack of connection between the distributor and the exhibitor.

I ended up making *Brainstorm*, which was the film I had created for the first Showscan introduction. Part of the film [was planned] for normal 35mm aspect ratio identical to HDTV. The rest of the film was going to be in Showscan. The aspect ratios would actually change in the theater: the film would shift from 35mm to 70mm Showscan, as a way of showing people how dramatic the difference was.

Videography: And they would have to get new equipment to show it?

Trumbull: It was a big deal. It was new projectors, new amplifiers, new screens, new lenses—new everything. That's when I found out that it was just not going to happen in Hollywood, so we ended up going to a fall-back situation. We shot nothing in Showscan, but we shot some of it in 70mm and the rest in 35mm.

So the whole story about *Brainstorm* and the Natalie Wood tragedy and the problems of getting the movie released and the public's antagonism toward seeing Natalie Wood's last film is a whole other story. Nevertheless, after I completed *Brainstorm*, that's when I put my efforts into Showscan to get it going as a viable business.

Videography: Does Showscan offer any special advantages when shooting special effects? Was that one of your reasons for developing the process?

Trumbull: It was in a way. As I mentioned, I came out of the special effects business and you are always trying to take something that isn't real and make it look real. And Showscan is a great way to make something look real if it's not.

At first glance you would think that Showscan is such a huge enlargement of the image that all the little flaws and faux pas and the matte lines that we make in special effects are going to be enlarged and the whole thing is going to look phoney. That's just not true. It improves it tremendously and makes it easier to produce reality in Showscan.

Videography: Is that because the camera is photographing at 60 fps?

Trumbull: There's much more information conveyed through the process and we no longer have to create artificial blur. Blur is vitally important to 24 fps movies' acceptability. In Showscan, we don't like blur; we like every frame to be pin sharp because we are delivering 10 times as much information in Showscan as a 35mm blurred movie.

Videography: Moving back to the Showscan business, when you left Paramount you were looking for a partner. What happened next?

Trumbull: When I departed from Paramount, I put together some picture deals—one of them was *Brainstorm* and another was *Blade Runner*. We acquired from Paramount, at the same time, all of the special effects equipment that I had put together at Future General. Because we were doing special effects and Showscan at the same time at Future General, we had put together quite a spectacular package of 70mm camera equipment and optical printers to support the process.

It was when I was at Paramount, and they didn't know what to do with me or Showscan, that we ended up contracting for the special effects for *Close Encounters*. I was sort of keeping Showscan alive by doing special effects. I was using special effects to generate enough money to continue to buy cameras and keep Showscan going as a business. We set up another company, EEG (Electronic Effects Group), that is still a fully operating company doing special effects work in 70mm. It has always been our plan that at some time in the future, that company would merge with Showscan and we would suddenly have a whole major motion picture studio dedicated to 70mm film production.

So there I was with EEG making a living and looking for a partner who could help make Showscan a theatrical success. I realized there was no one in the theatrical motion picture

industry who would understand what I was talking about and move forward.

Then an interesting thing happened that is a rather complicated, but very interesting story, about how innovation takes place. My partner became Robert Brock, who was from the Brock Hotel Corporation.

The big problem did not come from a lack of success with Showscan. Booz Allen & Hamilton, a highly respected market research firm out of New York, analyzed what we were doing. We built four theaters and market-tested Showscan. Showscan was the most highly received new product or invention they had ever market-tested, bar none.

At just the moment we were about to deploy this thing, video games took a big nose dive. Wall Street felt that Brock's business would go on the slides in direct proportion to the failure of video games. So it suddenly became impossible to raise funding. Although the business was crippled, we realized from the Booz Allen research that we had this incredible success on our hands.

Videography: How did you link up with the Plitt organization?

Trumbull Because of the public acceptance and the success, we decided we should have another look at the possibility of theatrical use of the process.

By an amazingly lucky turn of events, we were introduced to Henry Plitt, who I think is a genius in theatrical motion picture exhibition. He is the only person I've seen who truly recognizes what the future nature of motion picture exhibition will be. He recognizes that the multiplex concept will probably shift into another mode over the next 10 years. And that mode will be large-scale-event cinema houses. Real spectacular operations.

[Editor's note: Shortly after this conversation was conducted, Henry Plitt announced the sale of his Plitt Theater Circuit to Cineplex Odeon, effective November 22. Henry Plitt will reportedly direct all his efforts into the Showscan Film Corporation of which he is co-chairman.]

Videography: How many Showscan theaters will be built in the next few years?

Trumbull: Our business plan calls for the release of the first Showscan feature film in about June 1987 with a minimum of 30 theaters. We may have as many as 50 by then.

Videography: Will you be directing that movie?

Trumbull: Not necessarily. The plan is, we will build, with Plitt, 30 theaters: 20 in the U.S., 10 in foreign markets in every major capital. Then, over the next two or three years, we will expand that chain to 100 to 150 theaters. Then we will evaluate how much bigger it can become and still remain what we want it to be: a very controllable, high-end, road-show, cinema palace concept. This would be instead of having thousands of copies of a movie. We would road-show a picture for several months, if not a year, before it goes into a secondary release in 35mm.

For us, this means pure revenues at the theater. We would control every penny that comes into that theater. It would all come back to us. It would not be skimmed off by the distribution company that's going to take 35 percent of the box office gross before they even start doing creative bookkeeping.

Videography: Would those theaters show the more traditional films when they weren't showing Showscan films?

Trumbull: They could. Our ideal plan would be to keep those theaters filled with Showscan material 12 months a year.

Videography: What about the production costs for Showscan? Aren't they higher than shooting traditional formats?

Trumbull: We haven't done a feature-length film yet, but from our experience in making four shorter films, we know exactly what goes on in terms of production costs. Our estimate is that there will be a 10-percent increase, below-the-line only, in the cost of making a $10 to $20 million feature.

The added costs have to do with additional raw stock and processing costs. There are some minor costs in making 35mm reduction prints because we use 35mm, 24 fps prints for editorial purposes—dub, loop, edit, music score, foley. With 35mm, we can be compatible with the industry and all the services available in the industry.

Videography: Do you prefer being a businessman, director, or special effects expert?

Trumbull: I hate being a businessman. I hate meetings, I hate offices. I like directing very much, but I don't like what seems to come with directing in the Hollywood business, which is you spend 10 percent of your time directing a movie and 90 percent trying to survive with total idiots—bureaucrats, lawyers, business administration people.

I think that the Hollywood business is in trouble because the only people who can work are tough-as-nails, survivor types. I just don't enjoy it from that aspect. Creatively, I enjoy it very much. I also like doing these technical things. I seem to be one of the only sort of cross-over people who understand the aesthetic, creative end and can deal with actors, writers and producers and also understand the technology.

So I am sort of a self-appointed ambassador for the improvement of motion pictures. I think I can pull these things together because it requires a connection between the two worlds.

Videography: Turning to video technology and its use in aiding motion picture production: How have you used video in your special effects or directing work?

Trumbull: Way back on *The Andromeda Strain* in 1970, my partner and I built a 2,000-line, color high definition television system. If you ever look at that movie, you'll see that what appear to be video images are extremely sharp and clear high-quality images. We photographed effects on film, put them through our own home-made, one-frame-at-a-time, high resolution video telecine machine, processed it with video and changed the colors and did all kinds of electronic image enhancement, and then put it back to film. And then we used the film in the movie.

Videography: What about using electronics to produce special effects?

Trumbull: I got into that also on *The Andromeda Strain*, and since then I've had some involvement with it. I've gotton very frustrated with it. I did some heavy reasearch into it at the beginning of *Close Encounters* and *Star Trek*.

My basic feeling was that it's an emerging technology that is clearly light-years ahead of where it was 10 or even 5 years ago. The problem I have with digital computer-generated graphics is that it tends to be dominated by mathematicians and computer-programmer types who are not necessarily artists. I find that whenever I get involved in that kind of technology, my ability to intervene or get involved creatively is diminished.

Videography: You don't know the password or code.

Trumbull: I don't know the code. I'm not a mathematician. I don't have the vocabulary to communicate. I have tended to stay away from that, but I am presently getting back into it.

Videography: Moving back to the central theme of our discussion, is there any particular type of movie you would like made using the Showscan system?

Trumbull: Let me answer that first by saying that I have analyzed what succeeds in movie theaters. If you take the 50 top box office hits of all time and analyze them sequentially according to how much money they made and also note if they were with 70mm prints, stereo sound, wide screen and special effects, you'll see that 75 percent of all the money ever made in the movie business has been made with event movies that really qualify under one or more of those criteria.

We need to continue to develop movies that are both exciting and experimental but that also have profound stories, rich emotional involvement and great characters and plots. You need to blend all these things together.

The first films I would like to see made with Showscan would be experiential adventure films that will either have a lot of special effects or race-car driving or flying or something that tends to exploit the medium. But with powerful characters, major directors, major actors and major writers. It will fall right into what movies in theaters naturally are anyway.

My goal for the next three years is to dedicate myself to mainstreaming the Showscan process. We are inventing cameras here. We are going to have the finest cameras in the motion picture industry because I want the directors of photography and cinematographers to say, "Yes. I'd like to use this process because it looks better, feels better and is more convenient."

We are also developing new postproduction equipment so you can actually edit on 70mm with a giant-screen, flat-bed machine. That way, you can kinesthetically involved yourself in the movie in the editorial process. Or, you use EditDroid, Montage or any other video editing system because the system is compatible.

Videography: As a filmmaker, what do you think is the future of video in the motion picture postproduction process?

Trumbull: I've looked into video editing extensively. I think that video editing is definitely the future of postproduction. The problem with video editing with Showscan is that the video medium does not provide you with enough information to make a valid aesthetic judgement as to where to cut.

That is why I am so dedicated to high definition video. I am going back to Japan in a few months and I want to develop a very close relationship between Showscan and high definition video. That way, I will be able to edit in high definition video. I hope to be doing experiments with NHK in Japan and put Showscan on their 70mm laser telecine.

There is another whole story going on in the video business. They are recognizing that much of their software will continue to originate on film. Secondly, there are some serious technical problems at the camera end of the HDTV medium. Plumbicon tubes can deliver 1,125, lines but they require high light levels, as in a TV studio. But nobody wants to shoot that way. Saticon tubes can deliver the resolution, but they have a lot of comet-tailing and blurring problems.

CCDs for HDTV are going to be the future form of HDTV cameras, but they are three to five years away from being manufacturable; they can't make a high definition CCD camera yet. They don't have the accuracy of chip manufacturing in order to do that. This is according to Joe Flaherty of CBS.

Videography: As the creator of Showscan, how would you describe the effect of seeing Showscan to our readers who haven't seen it yet?

Trumbull: It is a dramatically involving entertainment experience. Showscan makes you, the viewer, much more involved and stimulated by what is going on on the screen.

In a regular movie, you are not a participant in the movie. You are a third-person, nonparticipating observor. Actors are talking to each other, loving each other, hitting each other, whatever it is. But you are sitting there uninvolved.

In Showscan, the audience is pushed much more into that activity. Therefore, the audience, I think, is more involved emotionally, stimulated by it, more a part of it. It just brings you opportunities and experiences that you will never have in your life. None of us are really going to go to the moon or into outer space or go into an atomic particle or climb Mount Everest or kiss Farah Fawcett. We can create, with Showscan, experiences that are very, very intense and very, very close.

Videography: Thank you, Douglas Trumbull